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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY	Czechoslovakia	REPORT	
SUBJECT	Ultrafiltr Presses for Processing Uranium Ore	DATE DISTR.	August 1956
		NO. OF PAGES	1
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This is UNEVALUATED Information

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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

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two reports on Ultrafiltr presses for processing uranium. Attachment A describes a press of Soviet make called the Lis Ultrafiltr Special. This press produces radioactive water and a muddy radioactive material. Attachment B describes a press of Czech make called the Ultrafiltr Normal which further purifies the radioactive water.

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STATE	X	ARMY	X	NAVY	X	AIR	X	FBI		AEC					

(NOTE: Washington distribution indicated by "X"; Field distribution by "#".)

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1. The Ultrafiltr "Special" press: The type of press used for the final stage of processing ore to obtain the radio-active material is of Soviet make and is called "Lis Ultrafiltr Special". The press produces two aggregations of radio-active material: the first substance is the uranium water and the other is radio-active material, which is a muddy, putty-like substance scraped off the silon cloth. The active water is shipped in special cistern-cars by rail somewhere in the East Germany direction. The muddy material is loaded into metal boxes, about 40 x 30 x 10 cm, which have sliding top; these metal containers are sealed and placed into wooden boxes and loaded onto trucks and shipped somewhere in the direction of the Ostrov - Horni Zdar airfield.

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2. The ore is pressed under the pressure of 5 kilograms per one square centimeter, i.e. full 200 divisions on the dial of the pressure gauge.
The capacity of radio-active muddy material is approximately for one opening (that is about 60 minutes of processing time including loading) 320 - 440 kgs.
The capacity of the active water (liquid active material) is impossible to determine as the flowing of active water is continuous.
The press is processing the liquid material which is produced as active water (material deprived of mud) from the Ultrafiltr Normal press.

3. The press is embedded in a concrete base, which is approximately 10 meters long, 1.70 meter high (the actual press without the base) and 1.80 meter wide. The concrete base is one meter high.

4. The press is manned by two men, who are opening the press and removing the "silon" cloths. The scraping of the silon cloths is done by 4-5 women. All the press attendants are wearing protective rubber clothing.

5. Key to sketch Plan "D":

1) Concrete base: The press is immovably installed in the concrete base, of one meter height and has 5 steps on both sides. Along the press the base gallery is guarded by railing.

2) Pressure head: The main head of the press is of cast-iron, about 180 cm wide, 120 cm high, and 70 cm long (measuring in the press' direction). On the head is placed the pressure gauge with dial, divided into 200 divisions. The pressure is on full 200 divisions. There is also a regulating lever to regulate pressure on the press.

3) Pressure wheel: The pressure wheel is operated by hand, and is placed on the head of the press.

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4) Maintenance canal. In the concrete base, under the press head is a canal protected by iron bars, from where manipulation and maintenance is being done.

5) Safety catch for pressure wheel; The safety catch functions:to let out oil and thus helps that the press can be manipulated by hand.

6) The main pressure head. To the press head is fixed an oil-pressure head, which, after the press has been tightened by hand,presses together the frames.

7) Handworked pressure head - screw; The hand-manipulated pressure head facilitates tightening of the press.

8) Pressure block. The block prevents sliding of the transition head to the side.

9) Compresible transition head (ztlacna preradovaci hlava) This head can be moved sidewise and functions to close the press.

10) Circular carrier for sliding board; Movable board, equipped on both sides with supporting wheels, which are running in the groove of the main beam of the press. (see point 13).

11) Main movable board is about 60 cm thick, 150 x 130 cm, made of cast-iron. Its function is to close and compresses.the press.

12) Frames and boards: made of cast-iron; there are 96 frames and 95 boards. Boards measurements are: 150 cm x 110 cm, 4.5 cm thickness.

13) Beam: (vzpera) On both sides, alongside the press is a steel beam in which is the groove on which is moving the mobile board.

14) Holders. With the help of the holders the main beam supports the boards and the frames and keeps them in their proper position.

15) Supports: the main beam is supported by three straight and by two bent supports.

16) Rear pushing board: the board on the rear of the press is of cast-iron, about 60 cm thick, 170 cm x 180 cm.

17) Flowing in of the liquid material - in the space between the frames and the boards are two basins (openings) through which the active water flows under pressure to the frames.

18) Manometer: On the rear pushing board is a manometer divided into 6 divisions.

19) Thermometer - (Celsius).

20) Thermometer - showing the degree of temperature of the processed material. At the same time the apparatus indicates the intensity of radio-active material.

21) Space between the concrete base and the press, about 30 cm, is used for hanging up the silon cloths.

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22) Removable casing of the beam end: By the rear pushing board is a steel casing protecting the beam end and the fastening nut. The beam can be taken out and the frames or the boards changed.

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23) Fastening nut of the beam:

24) Pipes through which the material is forced under pressure into the press. Pipes are of metal, 25 cm in diameter.

25) Regulator of incoming material: Regulates the supply of material and closes off the supply pipe.

"Silon" cloths, which are spread across both sides of the boards are much closer woven than those on other types of presses. They are yellow and have carbolic-like odor - (they are saturated with some chemicals unknown to Source). The silon cloths are being used only once and after their scraping they are sent somewhere outside for special cleaning.

Presses Pionyr, Norma and Normal use silon cloths repeatedly and from time to time they are washed in the plant's washrooms.

x x x

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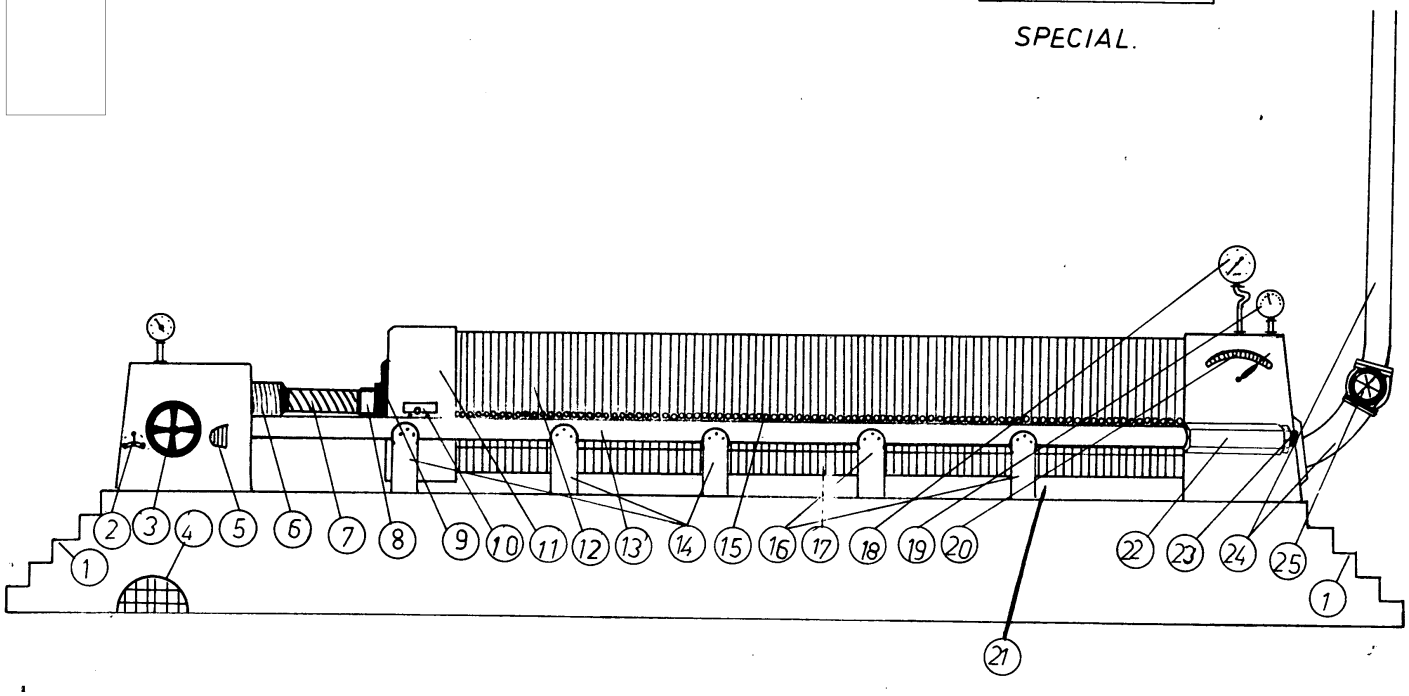
PLAN D

SCALE 1:40

SPECIAL.



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B

1. The press Normal, also called Ultrafiltr, is of Czech make and is made of cast-iron. The function of this press is to clean the liquid material (radioactive water) which is produced on the presses type Pionyr and Norma. The muddy material separated from the radioactive water is gathered on the frames and is transferred back into the "Sodna komora" (Soda chamber). The muddy material is highly radioactive.

Frames and boards on this press are of cast-iron, thickness 4.5 cm. Measurements of the frames and boards are the same as those used for the press type Norma, that is 140 x 140 centimeters. All the other measurements are about the same as they are on Norma press except that the press Normal is a few centimeters lower than the type Norma.
The liquid material (radioactive water) is forced in under pressure of 5-6 atmosphere. The pressure procedure is manipulated by hand (5 kilograms per one square centimeter = 200 divisions).
Work on the press is continuous and opening of the press depends on the amount of collected muddy material.
Material produced on this press is ready for further processing on the press Special.

2. Description of the "Normal" press:

Legend to the sketch "C" (press in action):

1) Pipes: 30 cm in diameter, metal; the material is forced through the pipes under pressure of 5-6 atmosphere.

2) Starter and regulator of material which is flowing into the press.

3) Next to the material-supplying pipes are pipes of 5 cm in diameter with a manometer of 180 divisions, type Siemens.

4) Main board is of cast-iron and is, at its widest point, approximately 50 cm wide.

5) Frames and boards are of cast-iron. There are 39 frames and 38 boards. The material is pressed through the boards and thus the radioactive water is deprived of the mud, which is gathering between the frames.

6) Mobile holders, made of cast-iron, bent, and their function is to open the press and maintain the frames in their proper position.

8 7) Revolving mobile head (hand-operated ?) its operating function is to tighten up the press.

7) Mobile board is also of cast-iron; its purpose is to close the press.

9) Pressure head: In addition to the handoperated revolving head there is a pressure head, functioning under oil pressure. 25X1

10) Main head: The main head (board) of the press is of cast-iron, approx. 70 cm wide, and carries the manometer and the pressure gauge.

11) Manometer: It is divided into 400 divisions and the normal pressure is 200 divisions, i.e. that the material is under pressure of 5 kgs per one square centimeter.

12) Hand-operated pressure pump: The pump is placed on the side of the main board and its purpose is to bring the press under full pressure.

13) Movable metal trays: There are four movable sheet-metal trays placed under the press in order to collect any possible fallen out material and to prevent the material from falling on the refuse-belt. The trays measure 1.60 x 1 meter, with an edge of 20 cm height each, and are painted with some special paint.

14) Outflow of radio-active water: (pipa = tab); Each board, at the bottom has an outlet, a brass pipe, through which the clear, radioactive water flows out.

15) Manger-shape basin for radio-active water: Along the side of the press, where is the outflow of radio-active water is a basin made of some synthetic substance. From the basin the radio-active water flows through synthetic pipe into a reservoir where the water is being treated for further, final processing in the press Special. The pipe is embedded in the ground, and leads from the main head of the press.

16) Under the press there are a few iron cutters which prevent the falling out of the whole material from the frames on the refuse-belt. The material is crushed by the cutters to pieces and thus the stopping of the refuse-belt is prevented.

17) Supporting beams: On each side of the press there is a steel beam which holds together the structure of the press (frames and boards) in its proper position. The beam has two props which are cemented into the floor.

Key for the sketch No.1 "C":

18) Silon cloths: Each board is wrapped over the ribs with silon cloth, which filters the material. The silon cloth is closely woven and is much stronger than the cloth used for the presses Norma and Pionyr. The cloth is of greyish color and is most likely impregnated with some chemicals.

19) Protrusions on the frames and boards: The protrusions are wrapped into silon cloths, which have the necessary openings in order to achieve close fitting.

Key for the sketch No.2 "C":

The whole frames is of cast-iron, 150 cm wide, 110 cm high. The thickness is 4.5 cm. The outside width of the frame is 10 cm. Protrusions for chambers (komory) are 20 x 15 cm.

1. In the upper protrusion there are two compression chambers (odvzdusnovaci komory), of 8 cm and 4 cm diameter, through which air is pumped to the boards.
2. In the lower protrusion there are two supply chamber (materialove komory) of same diameter, but have elliptical shape openings and are joined to the frame.

The weight of each frame is about 35-40 kilograms. 25X1

Description of the board of the press type Normal:

Key for the sketch No.3 "C":

The cast-iron board is of the same measurements as the frame. The ribs are the same as those for the presses Pionyr and Norma and are also of cast-iron. Both Ribs and the board are cast in one piece.

1) Compression chambers (komory) - the openings are similar as on the frame except that the elliptical openings/to the frame from the inside.
lead
The compresses air penetrates between the board and the silon cloth and the material is thus dried out.

2) Supply openings: match those on the frames, except that the have not elliptical openings to the inside of the board.

3) Outflow of the clear radio-active water: The outflow runs through a brass pipe which is fixed in the board's edge.

The board weighs about 90 kilograms.

There are 2 men operating the press who at the same time operate the presses Pionyr and Norma as the opening of the Normal press takes place once between 8-16 hours of processing time.

x x x

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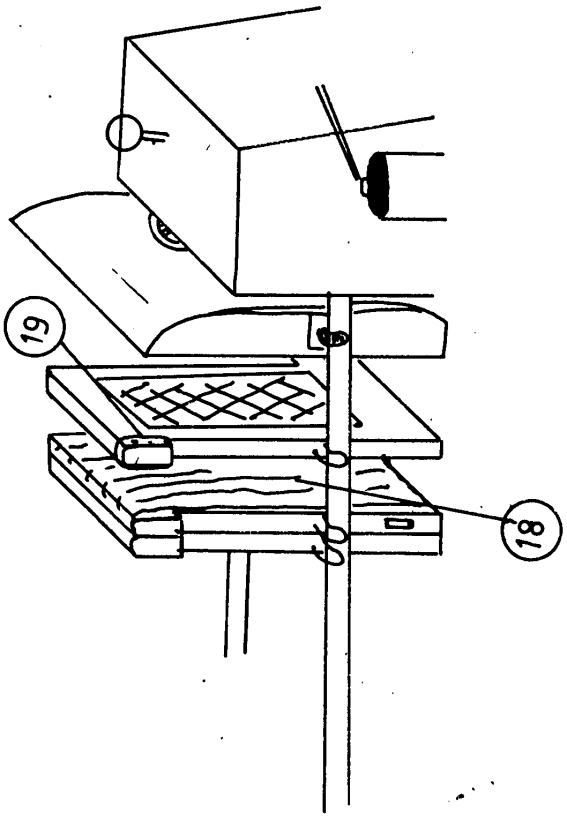
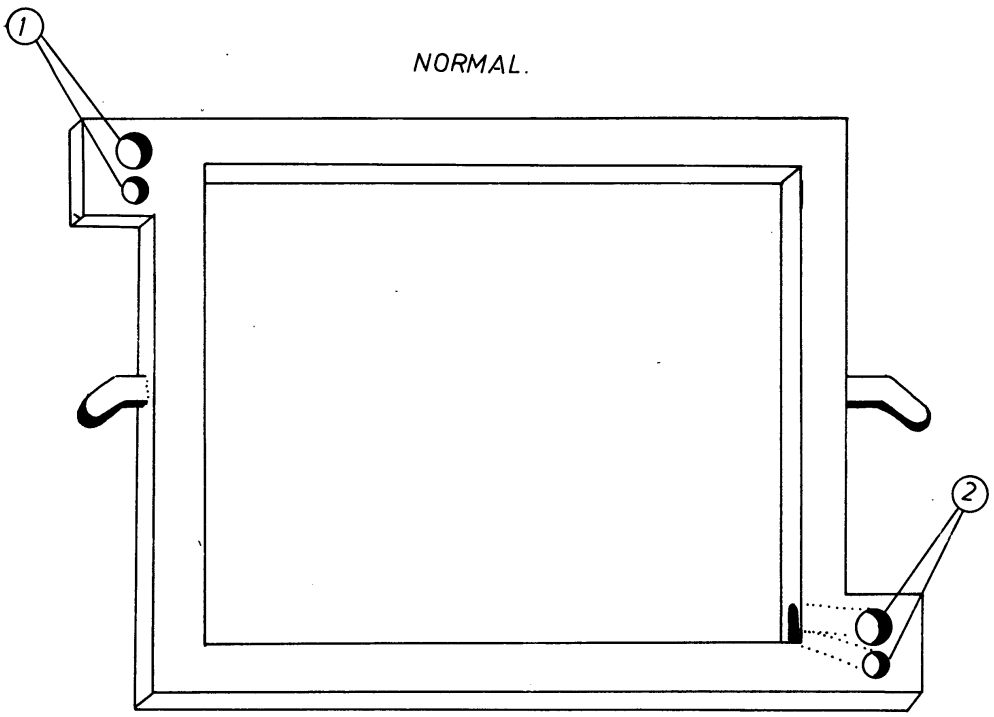


PLAN C-1



NORMAL.

PLAN : C - 2
SCALE 1:10

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